

CLAIMS

Claims as amended showing changes and status identifiers:

We claim:

Claims 1-142 (cancelled).

143. (currently amended) An impact tool for use on stone, concrete, metal or similarly hard material comprising:

a shaft having a striking end and a working end; and

a shaped polymeric material, reinforced by a material selected from the group of fiber or mineral, to be impacted, disposed immediately adjacent to said striking end in order to avoid direct metal-to-metal contact and in order to eliminate any loss of energy or damage to said shaped reinforced polymeric material from any gap between said shaped polymeric material and said striking end.

said shaped polymeric material having a striking end area of said polymeric material adjacent to said striking end and an impact end area to be impacted roughly opposite said striking end area,

said shaped polymeric material being of sufficient cross-sectional area for transmitting impact upon the impact end area, of appropriate thickness through said cross-sectional area, and of sufficient modulus to enable greater than sixty-seven per cent impact effectiveness compared to a similar impact tool without said polymeric material disposed adjacent to said striking end, ~~and~~

said impact tool further being capable of being struck on said impact end area at least 250 times without deformation of said shaped polymeric material that alters said impact effectiveness of said impact tool, and

said impact tool further being capable of use on stone, concrete, metal or similarly hard material.

144. (previously presented) The impact tool according to claim 143, further comprising: said shaped polymeric material being selected to have the further characteristic of redistributing the sound frequency on impact by a driving force on said impact tool to lower frequency ranges than said impact tool without said shaped polymeric material so that resulting sound and vibration is of lower dB, and less harmful frequency ranges to humans.

145. (previously presented) The impact tool according to claim 144 comprising: said working end being a chisel having an angle less than the standard 65-70 degree chisel angle; and,

said shaped polymeric material being of sufficient cross-sectional area for transmitting impact upon the impact end area, of appropriate thickness through said cross-sectional area, and of sufficient modulus to enable greater than sixty-seven per cent impact effectiveness compared to a similar impact tool without said shaped polymeric material and having a standard 65-70 degree chisel angle.

146. (previously presented) An impact tool comprising: a shaft having a striking end and a working end; and

a shaped fiber-reinforced polymeric material being a polymeric material to be impacted having a shape and disposed adjacent to said striking end to avoid direct metal-to-metal contact,

said shaped fiber-reinforced polymeric material having a striking end area of said polymeric material adjacent to said striking end and an impact end area to be impacted roughly opposite said striking end area, said shaped fiber-reinforced polymeric material being of sufficient cross-sectional area for transmitting impact upon the impact end area, of sufficient thickness through said cross-sectional area, and of sufficient modulus calculated according to the following formula:

said modulus times said cross-sectional area for transmitting impact upon the impact end area divided by said thickness through said cross-sectional area= X

X to be of a value to enable greater than sixty-seven per cent impact effectiveness compared to a similar impact tool without said fiber-reinforced polymeric material disposed adjacent to said striking end.

147. (previously presented) The impact tool according to claim 146, further comprising: said shaped polymeric material being selected to have the further characteristic of redistributing the sound frequency on impact by a driving force on said impact tool to lower frequency ranges than said impact tool without said shaped polymeric material so that resulting sound and vibration is of lower dB, and less harmful frequency ranges to humans.

148. (previously presented) The impact tool according to claims 146-147, further comprising:

said shaped polymeric material being selected from the group of polymeric materials reinforced by fiber or mineral.

149. (previously presented) The impact tool according to claim 144 comprising:

said working end being a chisel having an angle less than the standard 65-70 degree chisel angle; and,

said shaped fiber-reinforced polymeric material being of sufficient cross-sectional area for transmitting impact upon the impact end area, of appropriate thickness through said cross-sectional area, and of sufficient modulus to enable greater than sixty-seven per cent impact effectiveness compared to a similar impact tool without said shaped polymeric material and having a standard 65-70 degree chisel angle.

150. (previously presented) The impact tool according to claims 143, 144, 145, 146, 147, or 149, further comprising:

said shaped polymeric material being shaped so that no edge or surface is presented having a radius of curvature of less than .02 inches.

151. (currently amended) An impact tool for use on stone, concrete, metal or similarly hard material comprising:

a shaft having a striking end and a working end; and

a shaped polymeric material, reinforced by a material selected from the group of fiber or mineral, to be impacted, disposed immediately adjacent to said striking end in order to avoid direct metal-to-metal contact and in order to eliminate any loss of energy

or damage to said shaped reinforced polymeric material from any gap between said shaped polymeric material and said striking end,

said shaped fiber-reinforced polymeric material having a striking end area of said polymeric material adjacent to said striking end and an impact end area to be impacted roughly opposite said striking end area,

said shaped fiber-reinforced polymeric material being of sufficient cross-sectional area for transmitting impact upon the impact end area, of appropriate thickness through said cross-sectional area, and of sufficient modulus in order to maintain impact effectiveness while inhibiting failure of said shaped polymeric material upon impact, and further being shaped so that no edge or surface is presented having a radius of curvature of less than .02 inches,

said impact tool further being capable of being struck on said impact end area at least 250 times without deformation of said shaped polymeric material that alters said impact effectiveness of said impact tool, and

said impact tool further being capable of use on stone, concrete, metal or similarly hard material.

152. (previously presented) The impact tool according to claims 151, further comprising:

said shaped polymeric material having support ridges on said shaped polymeric material circumferentially located around said shaft adjacent to said striking end.

153. (previously presented) The impact tool according to claims 152, further comprising:

said shaped polymeric material being at least one material selected from the group of polymers including polyamide, polyester, polyurethane, polypropylene, polycarbonate.

154. (previously presented) The impact tool according to claims 143, 144, 145, 146, 147, 149, 151, or 152, further comprising:

said shaped polymeric material being comprised of at least one polyamide.

155. (previously presented) The impact tool according to claims 143, 144, 145, 146, 147, 149, 151, or 152, further comprising:

said shaped polymeric material being comprised of at least fiber-reinforced nylon.

156. (previously presented) The impact tool according to claims 143, 144, 145, 146, 147, 149, 151, or 152, further comprising:

said shaped polymeric material being shaped to extend beyond the cross-sectional area of said impact end area.

157. (previously presented) The impact tool according to claims 143, 144, 145, 146, 147, 149, 151, or 152, further comprising:

said shaped polymeric material being at least partially surrounding by a grip, and said grip also partially encasing said shaft.

158. (previously presented) The impact tool according to claims 143, 144, 145, 146, 147, 149, 151, or 152, further comprising:

said shaped polymeric material being at least partially surrounded by a grip, and said grip having a flange for hand protection.

159. (previously presented) The impact tool according to claims 143, 144, 145, 146, 147, 149, 151, or 152, further comprising:

said impact tool having a second shaped polymeric material being shaped to extend beyond the cross-section area of said impact end area and having an aperture exposing said impact end area.

160. (previously presented) The impact tool according to claims 143, 144, 145, 146, 147, 149, 151, or 152, further comprising:

said impact tool having a second shaped polymeric material being shaped to extend beyond the cross-section area of said impact end area and having an aperture exposing said impact end area and said second shaped polymeric material being removable.

161. (previously presented) The impact tool according to claims 143, 144, 145, 146, 147, 149, 151, or 152, further comprising:

said impact tool having a second shaped polymeric material being shaped to extend beyond the cross-section area of said impact end area and having an aperture exposing said impact end area and said second shaped polymeric material being removable; and

said second shaped polymeric material functioning as a cap and being composed of material inhibiting failure, including spalling failure.

162. (previously presented) The impact tool according to claims 143, 144, 145, 146, 147, 149, 151, or 152, further comprising:

said impact tool having a second shaped polymeric material being shaped to extend beyond the cross-section area of said impact end area and having an aperture exposing said impact end area and said second shaped polymeric material being removable; and

said second shaped polymeric material functioning as a cap and being composed of material inhibiting failure, and said material inhibiting failure being selected from the group of polymeric materials reinforced by fiber or mineral.

163. (previously presented) The impact tool according to claims 143, 144, 145, 146, 147, 149, 151, or 152, further comprising:

said impact tool having a second shaped polymeric material being shaped to extend beyond the cross-section area of said impact end area and having an aperture exposing said impact end area and said second shaped polymeric material being removable; and

said second shaped polymeric material functioning as a cap and being composed of material inhibiting failure.

Claims 164-175 (cancelled).